Defense Information Systems Agency

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Spectrum Access: *The Tools to Connect*

GEMSIS

15 Aug 2011

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Disclaimer

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Agenda

- GEMSIS Overview
- Increment 1
- Increment 2
- Increment 3 and Beyond
- Information and Communications
- Questions/Discussion

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What is GEMSIS?

- **Global Electromagnetic Spectrum Information System (GEMSIS) is the Joint program of record that will transform spectrum operations from a pre-planned and static frequency assignment into a dynamic, responsive, and agile capability through the federation of existing and future capabilities and services in a net-centric services environment.**

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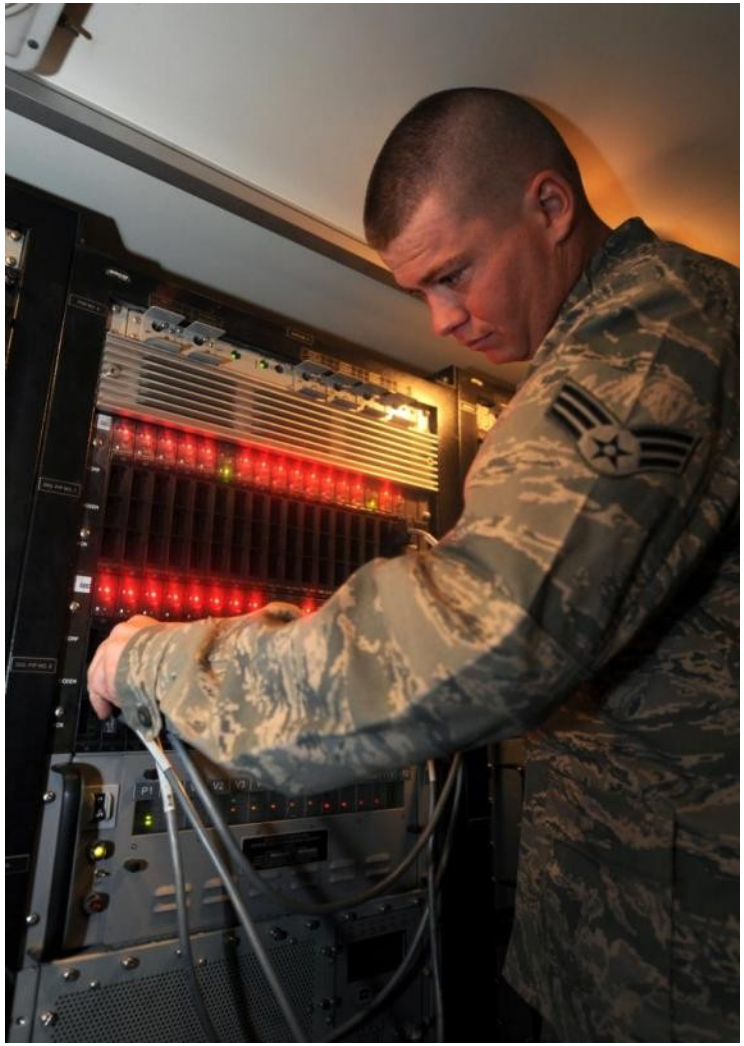
GEMSIS tools will…



- Transform spectrum operations to a responsive and agile capability to request, assign, allocate, and deconflict portions of the electromagnetic spectrum
- Allow End-to-end spectrum supportability & frequency assignment
- Provide strategic spectrum management planning
- Provide modeling and simulation for mission planning, rehearsal, and acquisition
- Increase the common picture of spectrum situational awareness of friendly and hostile forces

GEMSIS Operational View

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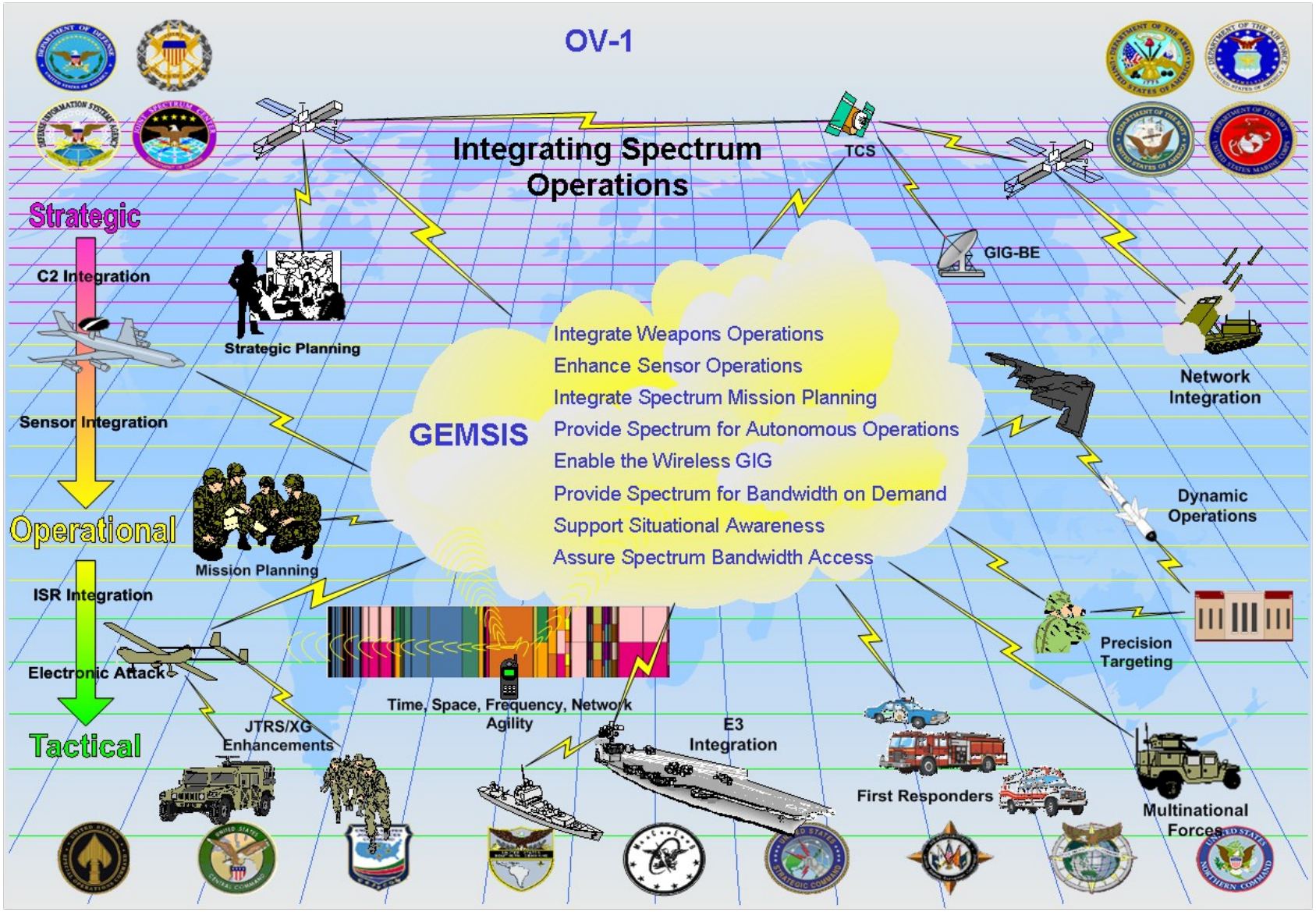

GEMSIS History

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2006	• GEMSIS Initial Capabilities Document (ICD) approved by Joint Requirements Oversight Committee (JROC), 23 Jan 06
2007	• GEMSIS Concept Decision Acquisition Decision Memorandum (ADM), signed by John Grimes, ASD NII, 8 Mar 07 • GEMSIS Program initiated as a new start program (Oct 07), Assigned to PEO-STS • GEMSIS removed from OSD Oversight List, 26 Dec 07
2008	• Designated as DISA Acquisition Category III Program, DISA CAE designated as Milestone Decision Authority, 21 Feb 08 • GEMSIS PMO located at the DSO/Joint Spectrum Center (JSC), Feb 08 • GEMSIS PMO realigned 1 Oct 08 from PEO-STS to DSO-Senior Decision Authority oversight
2009	• DISA CAE approved revised GEMSIS Increment 1 ADM, 19 Feb 09, revised 26 May 09 (event driven) • Transition Host Nation Spectrum Worldwide Database Online (HNSWDO) to GEMSIS Increment 1, 24 Aug 09 • GEMSIS Increment 1 Acquisition MS C/Fielding Decision, 16 Dec 09
2010	• GEMSIS Increment 1 Acquisition Strategy, 4 Feb 10 • GEMSIS Increment 2 Analysis of Alternatives (AoA), 1 Oct 10
2011	• GEMSIS Increment 2 Acquisition Review Board Conducted March 11

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Program Approach Increment 1

Increment 1

- Transition capabilities from Coalition Joint Spectrum Management Planning Tool (CJSMPT) Joint Capability Technical Demonstration
  - Standalone Supports Frequency Assignment and Deconfliction Process
- Transition Host Nation Spectrum Worldwide Database Online (HNSWDO) Version 3.1.2
  - Web-based and Supports Spectrum Supportability Business Process
- Evaluated other opportunities

Increment 2

- Analysis of Alternatives Recommends adoption
  - Joint Spectrum Data Repository
  - Stepstone
  - Afloat Electromagnetic Spectrum Operations Program
  - Spectrum XXI Online
  - Leverage Net-Centric Enterprise Services and Intelink
- Initial integrated Net Centric Infrastructure

Increment 3 and beyond

- Globally connected suite of services
- Enterprise Information Environment
- Enterprise services
- Improve upon current spectrum management systems
- Exchange information with related operational planning systems
- Comprehensive spectrum situational information
- Electronic Warfare integration

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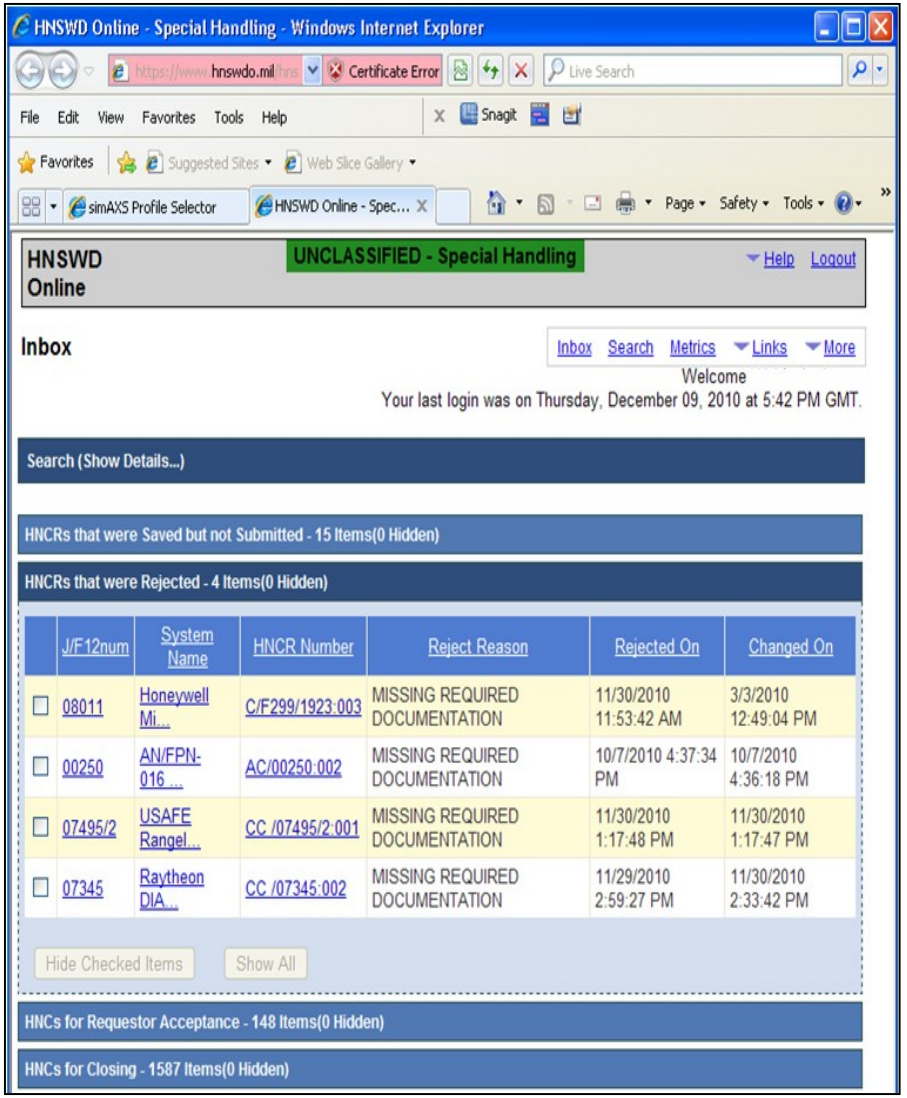
Host Nation Spectrum Worldwide Database Online

- **A web application that facilitates Warfighter deployment and communications by providing worldwide visibility of host nation radio frequency spectrum dependent equipment's supportability**
- **Automates distribution of host nation coordination requests and COCOM submission of host nation supportability comments, reducing the time required to manage the process**



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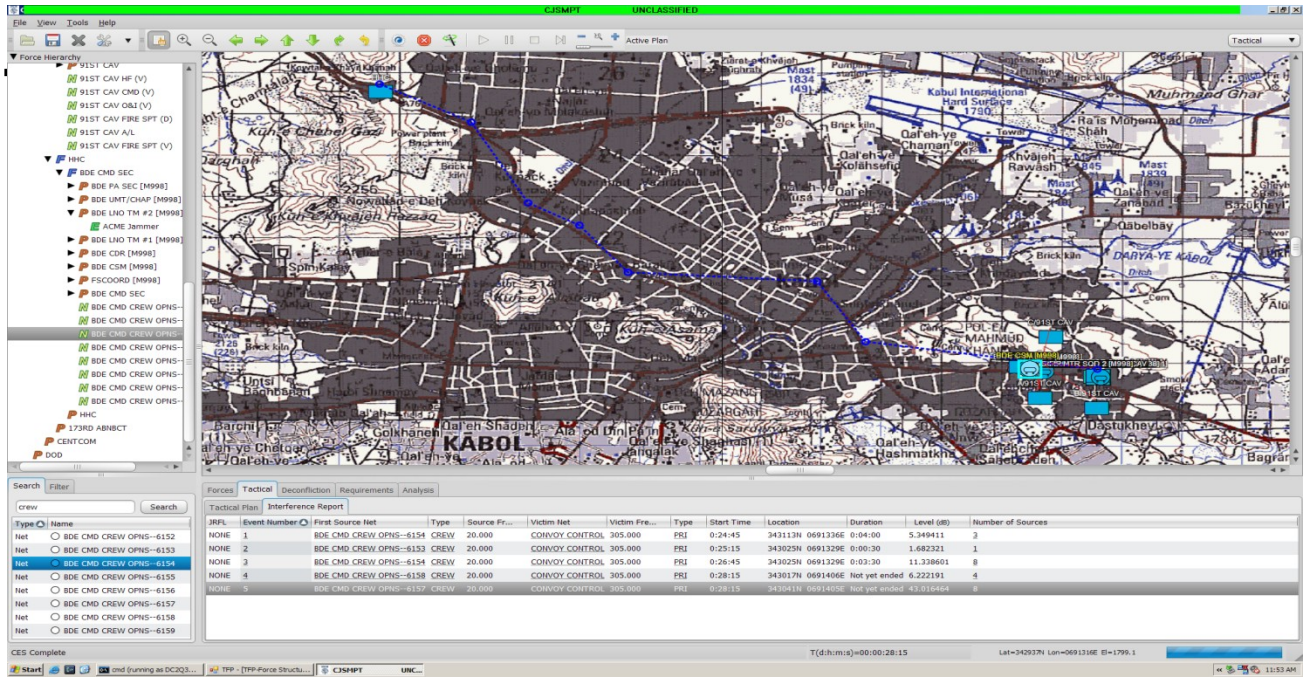
Spectrum Management Planning Tool

- The CJSMPT tool delivers an integrated electromagnetic spectrum management and near-real time mission planning tool to enable frequency managers to perform electromagnetic spectrum planning and deconfliction from tactical through combined and



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Program Approach Increment 2

GEMSIS
GLOBAL ELECTROMAGNETIC SPECTRUM INFORMATION SYSTEM

Increment 1

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Increment 2

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Draft GEMSIS Architecture End State (Inc 1 + Inc 2)

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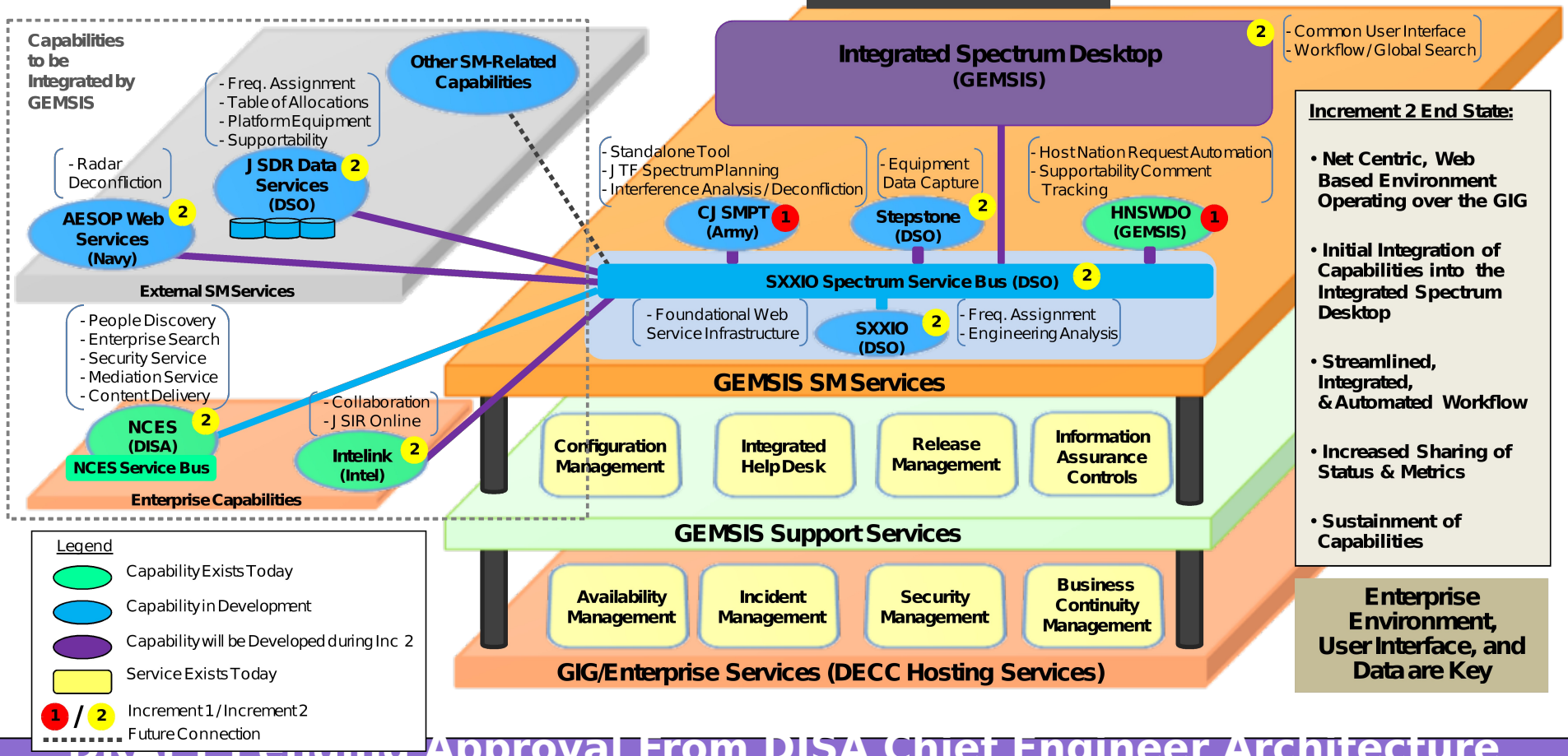
1. Equipment Characteristics
2. Host Nation Coordination
3. Frequency Assignments
4. Allotments
5. JRFL
6. Interference Reports
7. JCEOI

Benefits:
- Reduce time between submitting frequency resource request and obtaining spectrum access
- Reduce time to build equipment characteristic records from original sources

Providing Improvements to 7 Spectrum Management Transactions

Benefits:
- Reduce time to identify sources of interference
- Reduce time to resolve spectrum use conflicts
- Reduce time to submit Host Nation supportability requests



Increment 2 End State:

- Net Centric, Web Based Environment Operating over the GIG
- Initial Integration of Capabilities into the Integrated Spectrum Desktop
- Streamlined, Integrated, & Automated Workflow
- Increased Sharing of Status & Metrics
- Sustainment of Capabilities

Enterprise Environment, User Interface, and Data are Key

DRAFT Pending Approval From DISA Chief Engineer Architecture Panel

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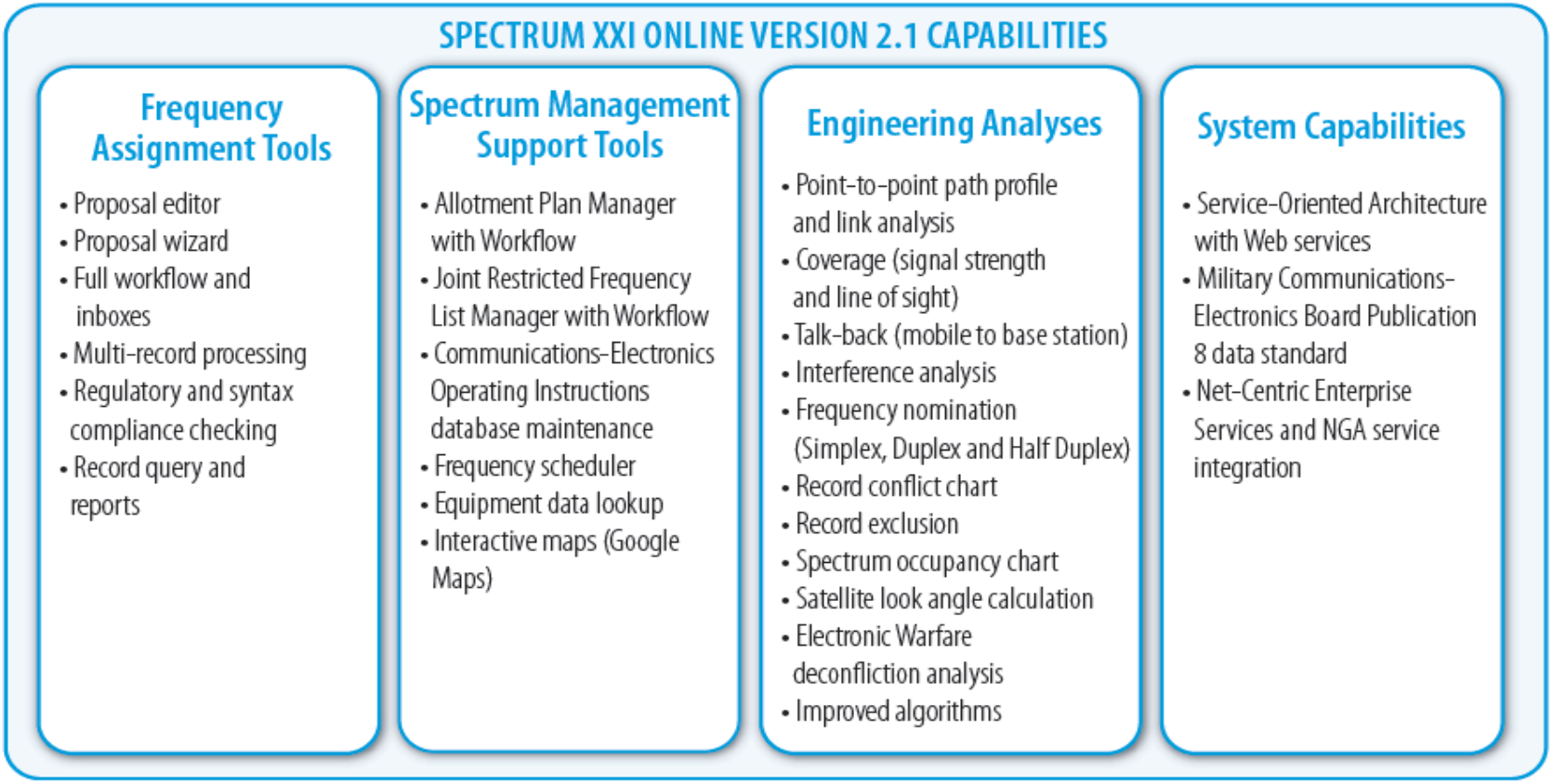
Spectrum XXI Online

- **Joint online spectrum management tool supporting DoD management of the radio frequency spectrum in support of operations**


SPECTRUM XXI ONLINE VERSION 2.1 CAPABILITIES
Frequency Assignment Tools
• Proposal editor
• Proposal wizard
• Full workflow and inboxes
• Multi-record processing
• Regulatory and syntax compliance checking
• Record query and reports
Spectrum Management Support Tools
• Allotment Plan Manager with Workflow
• Joint Restricted Frequency List Manager with Workflow
• Communications-Electronics Operating Instructions database maintenance
• Frequency scheduler
• Equipment data lookup
• Interactive maps (Google Maps)
Engineering Analyses
• Point-to-point path profile and link analysis
• Coverage (signal strength and line of sight)
• Talk-back (mobile to base station)
• Interference analysis
• Frequency nomination (Simplex, Duplex and Half Duplex)
• Record conflict chart
• Record exclusion
• Spectrum occupancy chart
• Satellite look angle calculation
• Electronic Warfare deconfliction analysis
• Improved algorithms
System Capabilities
• Service-Oriented Architecture with Web services
• Military Communications-Electronics Board Publication 8 data standard
• Net-Centric Enterprise Services and NGA service integration

Joint Spectrum Data Repository

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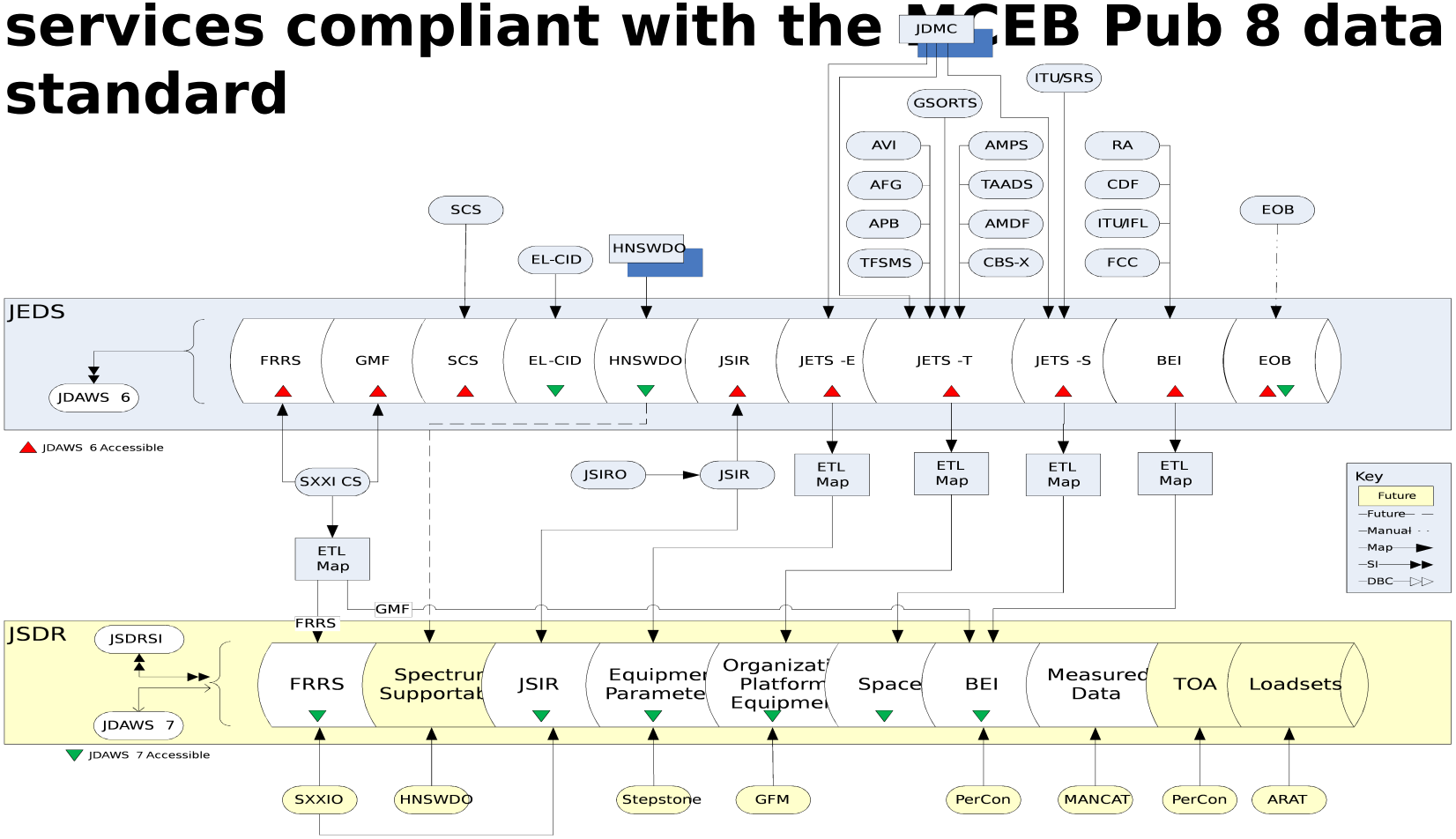
- **Comprehensive repository of spectrum management data supporting sources/web services compliant with the MCEB Pub 8 data standard**



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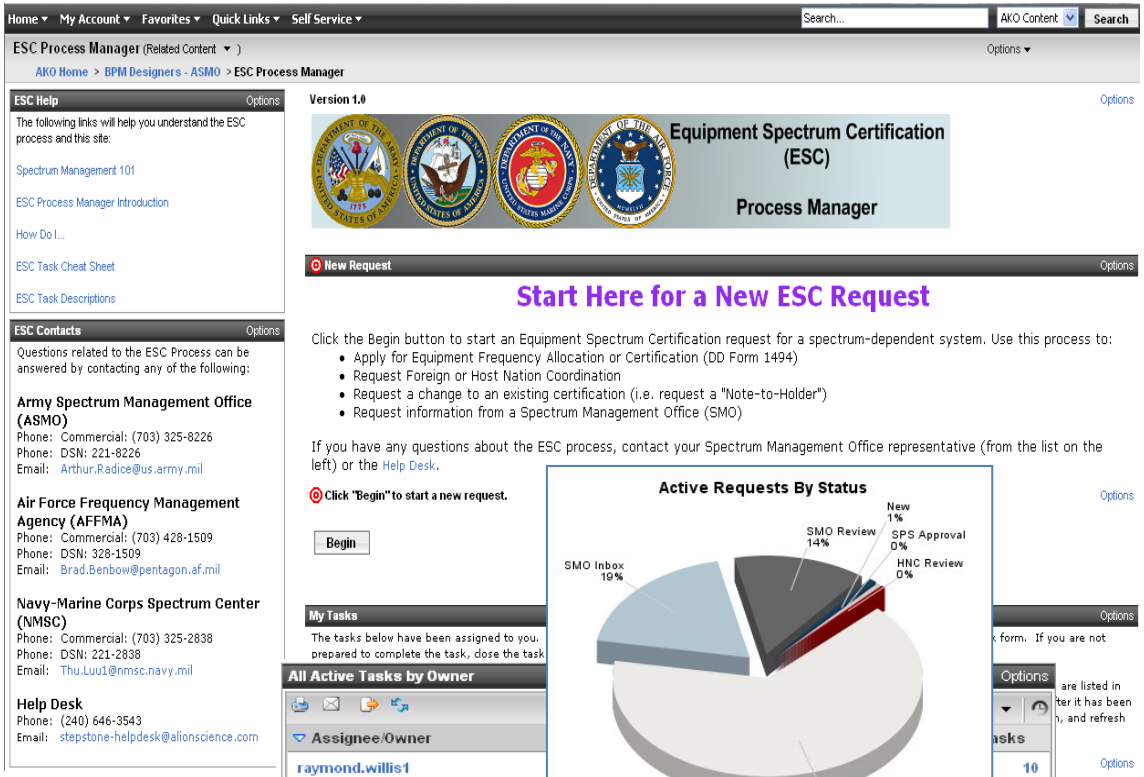
Stepstone

- **Online resource for data capture of parametric information for spectrum dependent equipment supporting the spectrum certification and spectrum supportability processes**


Home ▾ My Account ▾ Favorites ▾ Quick Links ▾ Self Service ▾
Search...
AKO Content
Search
ESC Process Manager (Related Content ▾)
Options ▾
AKO Home > BPM Designers - ASMO > ESC Process Manager
ESC Help
Options
The following links will help you understand the ESC process and this site:
Spectrum Management 101
ESC Process Manager Introduction
How Do I...
ESC Task Cheat Sheet
ESC Task Descriptions
ESC Contacts
Options
Questions related to the ESC Process can be answered by contacting any of the following:
Army Spectrum Management Office (ASMO)
Phone: Commercial: (703) 325-8226
Phone: DSN: 221-8226
Email: Arthur.Radice@us.army.mil
Air Force Frequency Management Agency (AFFMA)
Phone: Commercial: (703) 428-1509
Phone: DSN: 328-1509
Email: Brad.Benbow@pentagon.af.mil
Navy-Marine Corps Spectrum Center (NMSC)
Phone: Commercial: (703) 325-2838
Phone: DSN: 221-2838
Email: Thu.Luu1@nmsc.navy.mil
Help Desk
Phone: (240) 646-3543
Email: stepstone-helpdesk@alionscience.com
Version 1.0
Options
Equipment Spectrum Certification (ESC)
Process Manager
New Request
Options
Start Here for a New ESC Request
Click the Begin button to start an Equipment Spectrum Certification request for a spectrum-dependent system. Use this process to:
Apply for Equipment Frequency Allocation or Certification (DD Form 1494)
Request Foreign or Host Nation Coordination
Request a change to an existing certification (i.e. request a "Note-to-Holder")
Request information from a Spectrum Management Office (SMO)
If you have any questions about the ESC process, contact your Spectrum Management Office representative (from the list on the left) or the Help Desk.
Click "Begin" to start a new request.
Begin
Active Requests By Status
New 1%
SMO Review 14%
SPS Approval 0%
HNC Review 0%
SMO Inbox 19%
Preview 65%
My Tasks
Options
The tasks below have been assigned to you. prepared to complete the task, close the task
All Active Tasks by Owner
Options
Assignee/Owner
raymond.willis1 10
george.brungot 1
george.brungot 5
diane.craft Accepted 1
charles.briggs Assigned 2
charles.briggs Accepted 1
adekunle.adegorusi Accepted 8
adekunle.adegorusi Assigned 10
ESC Technical Lead - ASMO Assigned 1
ESC Liaison - ASMO; ESC Technical Lead - ASMO Assigned 39
ESC Liaison - ASMO Assigned 142
ESC SMO Representative - ASMO Assigned 1

Status Statistics for Active Requests Options

Columns ▾ Views ▾ Filters ▾

Current Status	Requests
HNC Review	1
New	2
Preview	145
SMO Inbox	42
SMO Review	31
SPS Approval	1

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Afloat Electromagnetic Spectrum Operations Program Web Services

- **Integrated operational radar, combat system, and communication frequency modeling and simulation for EMI determination**

Enterprise Collaborative Services

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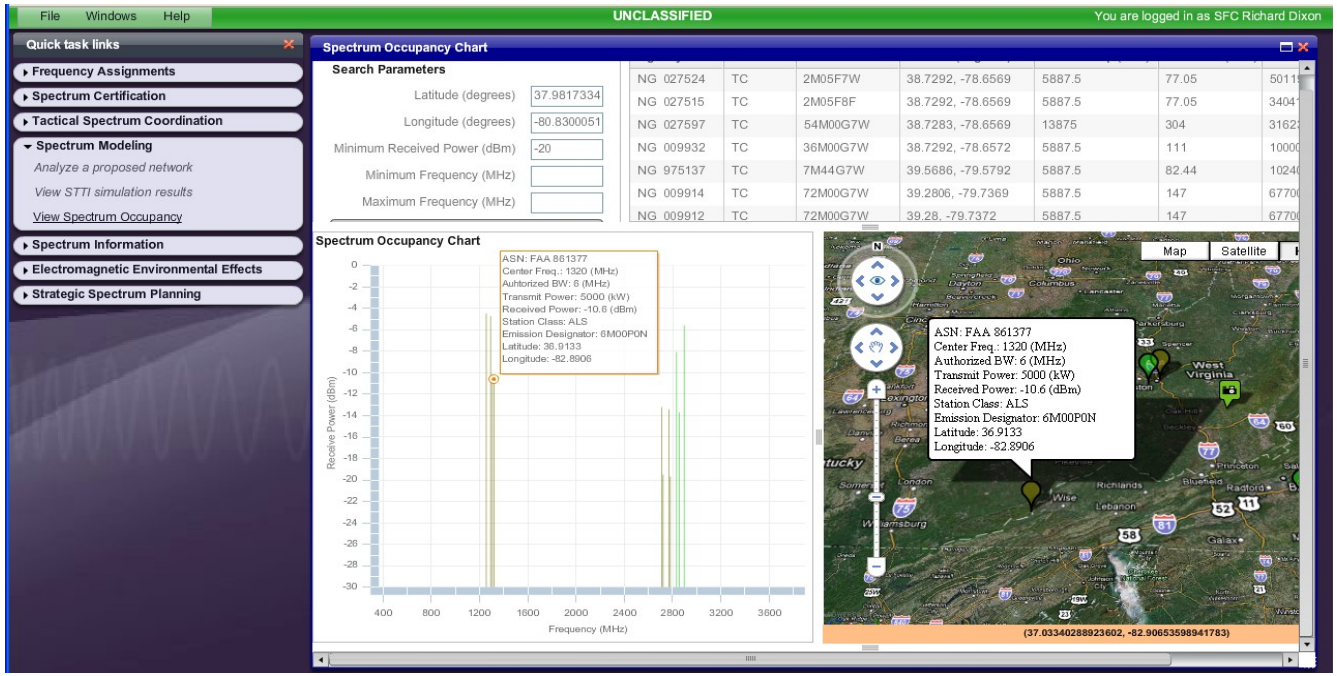
- **Integrated Spectrum Desktop**
  - **Enables GEMSIS near-term end state through the integration of data, workflow, application, user, and common services via a Service Oriented Architecture**
  - **GEMSIS will initially federate Increment 1 (CJSMPT and HNSWDO) and then Increment 2 capabilities**



Enterprise Collaborative Services

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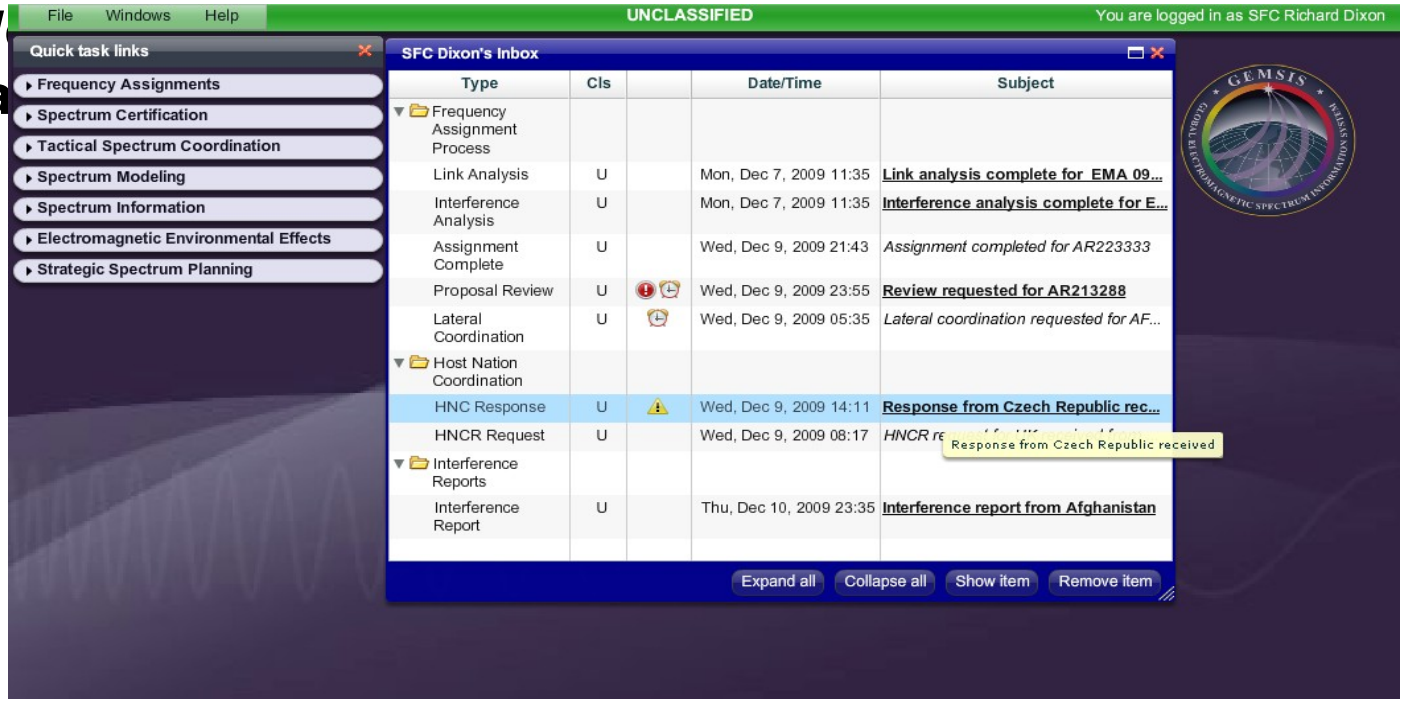
- **NCES**
  - **Provides for DoD content, people, and service discovery, enterprise service management, messaging, web conferencing, chat collaboration, metadata registry**
- **Intelink**
  - **W**
  - **ca**



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Program Approach Increment 3

Increment 1

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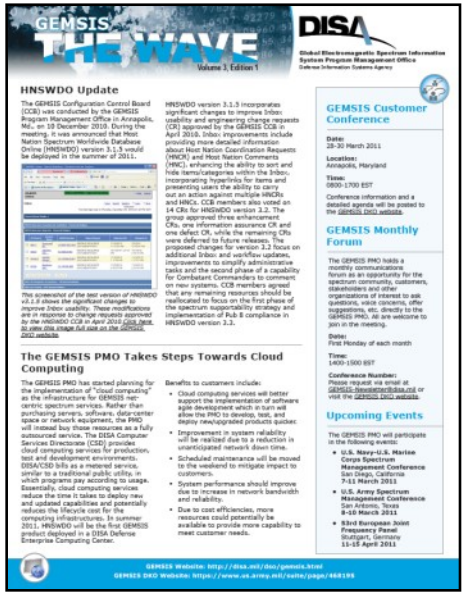
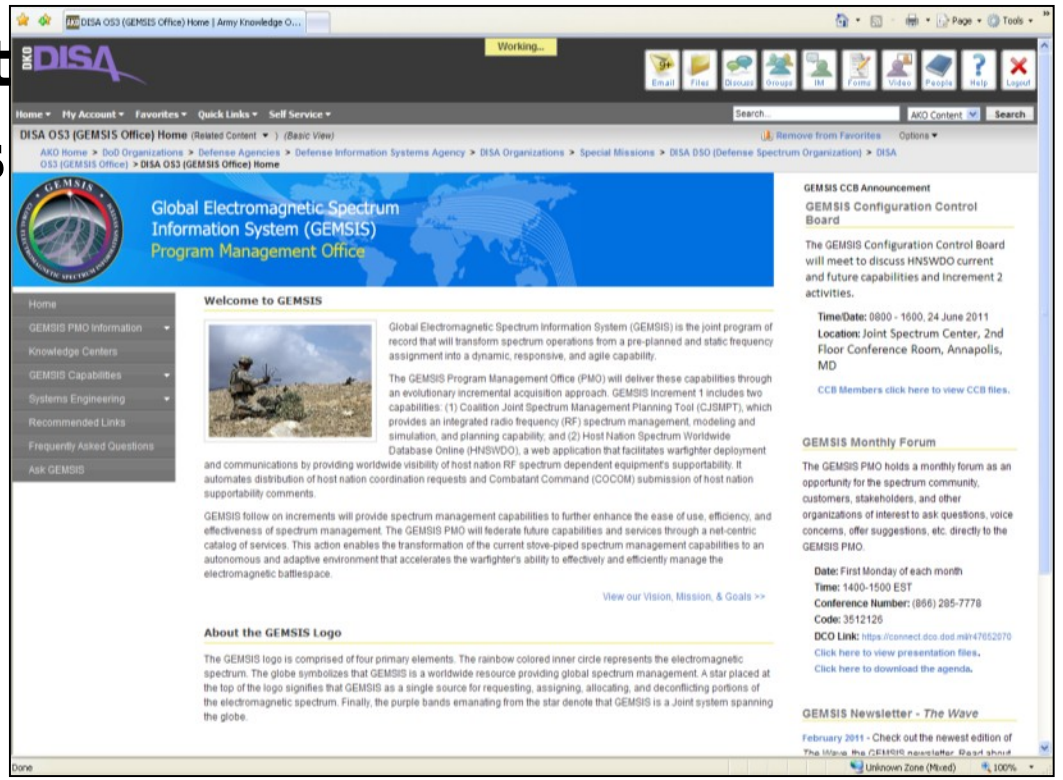
Information and Communications

- **GEMSIS DKO site: https://www.us.army.mil/suite/page/468195**
- **Monthly Communications Forum: 1400-1500 EST, first Monday of each month**
- **The Wave newslet**
- **Customer surveys**





Questions/Discussion

DEFENSE INFORMATION SYSTEMS AGENCY